

infotech by annette lamb and larry johnson

the potential, the pitfalls, and the promise of multi-user virtual environments: getting a second life

I'm floating inside a tornado. Cool!

I can't believe I'm actually interacting with a best selling author.

I'm re-enacting an event that took place over 200 years ago.

Educators often talk about actively engaging their students in learning through books, images, movies, and other information resources. However a new generation of technology tools provides the opportunity to psychologically immerse young people in multi-user virtual environments (MUVE). Three-dimensional worlds such as *Teen Second Life* provide a creative playground where learners create objects, test ideas, and collaborate with others.

THE POTENTIAL

Unlike multi-user role-playing games like *World of Warcraft*, virtual environments like *Second Life* aren't designed for particular types of activities. They simply provide a place where people can gather, communicate, and build interactive worlds. It's up to users to design scenarios, simulations, as well as meaningful adventures and learning experiences. While some people choose to recreate specific locations such as the famous arch at *St. Louis Island* or the Eiffel Tower at *Paris 1900 Island*, others create fantasy worlds filled with castles and unicorns. By employing easy-to-use tools, each participant creates an avatar to represent themselves in these computer-based locations.

One of the best examples of this potential is a project sponsored by Suffern Middle School in New York. In 2006, teacher-librarian Peggy Sheehy developed a *Teen Second Life* area known as *Ramapo Island* to promote meaningful applications of technology in learning. Since then, her students have role-played the journey through Ellis Island, held a mock trial after reading *Of Mice and Men*, explored concepts of body image for a health class, and organized literature discussions "in-world."

Teaming with educational consultant Bernajean Porter, these middle school students recently participated in a digital storytelling week with the task of finding their own visual parallel personal story while narrating a voice interpretation of Robert Frost's poem, "The Road Less Traveled". Students used dioramas for their storyboarding, recorded video in *Second Life* in a machinima format, and constructed three-dimensional "emotional spaces" called Storyworlds. The result is *Ramapo's Frost Storyworld*, a powerful *Second Life* experience

FIGURE 1



Paris 1900.

focusing on the choices we make in life. Porter found the young people really got engaged in the experience and the works of Frost. Speaking on a panel at a National Educational Computing Conference, a student noted that "I think for an old dead man—he (Robert Frost) really got how hard it is to be a teenager."

FIGURE 2



Ramapo's Frost Storyworld.

MUVES IN TEACHING AND LEARNING

Educators are beginning to explore the potential of these virtual spaces. For instance, the *Second Life* island of *ROMA* immerses visitors in the world of ancient Rome. To learn how archaeologists discover information about ancient worlds, visitors are encouraged to participate in an interactive archaeological excavation using

FIGURE 3



ROMA Archaeology.

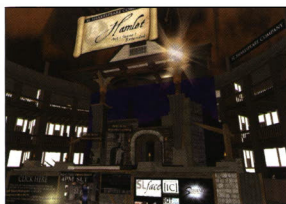
tools to uncover ancient artifacts (see Figure 3). These simulated environments provide students with authentic contexts for learning.

As the environments and tools evolve, what kinds of teaching and learning environments will be effective, efficient, and appealing? Let's explore a few possibilities across the curriculum. The following locations are available through *Second Life*. The *Second Life* addresses known as SLurls are listed at the end of the article.

ENGLISH, LITERATURE, AND LANGUAGE ARTS

Literature comes alive when watching a performance of a Shakespearean play at the virtual *Globe Theater* on *SLiteracy Island* where actors from around the world come together wearing elaborate period costumes for a live event. Imagine the possibilities: young people could read their creative works in a virtual poetry slam or join an author in a virtual discussion. It's possible to explore one person's vision of Frances Hodgson Burnett's "Secret Garden" at *Imagination Island* or *Hogwarts* from the Harry Potter series, but would it not be great to involve students in creating their own vision of a book setting from *Tuck Everlasting* or *Ender's Game*?

FIGURE 4



A production of *Hamlet* at the *Globe Theatre*.

Many of these opportunities are already available in *Second Life*. The key is building direct connections to curriculum and providing young people with easy ways to use tools and spaces. Imagine they are reading a graphic novel set in the 19th Century Steampunk era. They could visit the *Independent State of Caledon Island* to get a sense for this world. If students are

discussing issues related to censorship, be sure to visit *Bradburyville* for information and resources related to "Fahrenheit 451" and other books by Ray Bradbury.

The *Alliance Virtual Library* on Info Island is the place to find online resources for literature and other information. While exploring Info Island, learners can visit the *Sci Fi and Fantasy Portal* as well as *Mystery Manor* for author and book information, along with opportunities to join virtual book discussions.

HISTORY

Re-creations of historical sites provide an opportunity to travel back in time. Explore a replica of the *Temple of Isis* from Ancient Egypt or visit Mexico's *Chichen Itza*. Another site, *Renaissance Island*, provides insights into life in Europe during the 14th to 17th centuries. Imagine young people reading a historical fiction novel and researching the time period, then immersing themselves in the time and place. Participants can shop in the historical town, ride a horse, role-play a blacksmith, attend a jousting event or music concert, or explore everyday activities during the Renaissance period.

FIGURE 5



Renaissance Island

Whether walking in the shoes of a Confederate soldier during the American Civil War or baking bread in the Middle Ages, history is brought to life through virtual re-enactments. Educators can recreate a famous day in history or an average day in the life of a pioneer. What would you have traded on the Silk Road or taken on the Santa Fe Trail?

Not only can you re-create actual events and situations, you can explore "what-if" scenarios. What would it be like to dine with authors or scientists from the past?

Who would you be? Who would you invite?

Bernie Dodge at San Diego State University has been working on ways to incorporate the WebQuest approach into the *Second Life* environment. While it is currently time consuming to produce materials with the current tools, you can get an idea of the approach by exploring the pioneer, mission, Puritans, and Chinese immigrant areas at *Second Life Pioneers*. Participants wear period costumes and have discussions around a virtual campfire. A *Meet the Immigrants WebQuest* serves as a companion for the *Second Life* environment.

CULTURE AND LANGUAGE

Whether practicing Spanish in a Mexican market or recreating a Japanese Theater performance, young people can immerse themselves in culture and language. Right now, it is possible to stroll Japanese gardens. What if a warehouse of customizable costumes and props were available to young people? What if volunteers from various cultures worked together to provide information and resources to bring authenticity to these experiences? Interacting with native speakers, discussing local customs, and dispelling myths are only a few of the possibilities.

ECONOMICS AND PUBLIC SERVICE

Non-profit organizations are finding ways to raise money in *Second Life*. Many virtual libraries provide donation boxes where users can contribute. *WaterPartners Village* is the virtual home of a non-profit organization providing safe drinking water and sanitation for people in developing

FIGURE 6



WaterPartners Village.



LIZETTE HANNEGAN
& SHARON GROVER

> AUDIOBOOKS

SECONDARY

From the Oscars to the Nobel prizes, awards acknowledge notable contributions to their various fields. Award-winning titles for children and young adults feature some of the best stories for students and provide connections to curricular themes. Have your students try them out loud.

Key: C=cd, C=cassette, h=hardcover, p=paperback

Elijah of Buxton. Christopher Paul Curtis. Read by Mirron Willis. Listening Library, 2008. C: 978-0-7393-6415-4. \$55.00. Grades 5-8. Willis interprets the voice of 11 year old Elijah with a sureness that conveys his courage, humor, love of family, and devotion to community. Set in 1859 and based on true events, the Buxton settlement in Canada was a refuge for runaway slaves. Elijah and his parents witness the successes and tragedies of their friends and neighbors. This 2008 Coretta Scott King Author Award and Newbery Honor Medal winner fits easily into many curricular themes.

Good masters! Sweet ladies! Voices from a medieval village. Laura Amy Schlitz. Read by Christina Moore and a Full Cast. Recorded Books, 2008. C: 978-1-4361-1963-4. \$30.75. Grades 5-12. The inhabitants of a medieval village spring to life, making the study of feudal Europe memorable for students today. This 2008 Newbery Medal winner has been enhanced by a full cast and period music—a learning experience for all listeners.

A step from Heaven. An Na. Read by Jina Oh. Listening Library, 2002. C: 978-0-8072-1612-5. \$38.00. Grades 7-12. As Young Ju learns to speak English, assimilates to a new culture, and gains confidence, her parents are forced to temper their traditional Korean ways with the expectations of American society. Jina Oh's sensitive narration highlights the struggle of the immigrant family in this 2002 Michael L. Printz Award winner and enhances the cultural experience.

countries. They provide a virtual exploration of the water crisis in India, Honduras, and Ethiopia and collect donations online through *Second Life* and their Web site.

Some developers create and donate virtual objects that are sold in marketplaces. Money from these virtual sales supports real-world projects.

Using this model, young people could learn about both real-world economics and public service in an environment they create. They could even build their own virtual marketplace where objects could be created and sold to support real life school and community service projects.

Social activism is a popular activity in virtual environments as organizations raise money through virtual walks, marathons, and concerts.

MATH AND SCIENCE

From exploring the spread of viruses to examining the physics of moving objects, virtual worlds provide a safe environment for learning and applying scientific concepts. Visitors explore natural wonders in space and underwater.

The National Aeronautics and Space Administration's (NASA) *Spaceport Alpha* allows participants to take a virtual tour of the International Space Station and *Explorer Island* encourages users to launch a Mars Airbag or ride a Mars Dust Devil, while the National Oceanic and Atmospheric Administration's (NOAA) *Science on a Sphere* provides demonstrations of glaciers, ocean life, tsunamis, tornado, and hurricanes. At *Weather Channel Island*, visitors can ride a bike, try the ski lift, and surf in the ocean.

FIGURE 7



Board a flight to the International Space Station.

A number of Islands such as *Second Nature* focus on creating artificial ecosystems to study the interaction and growth of plants and animals. For instance, the *Island of Svarga* features plants, insects, and birds living in a fully functioning ecosystem. What if young people could design their own ecosystem by creating virtual plants and animals that could interact with each other? They could learn what happens when predators and prey become unbalanced and make comparisons to situations found in the real world.

Health resources such as *HealthInfo Island* are abundant in *Second Life*. While the *Virtual Hallucinations* project is designed to help visitors understand schizophrenia, the *Heart Murmur Simulation* allows participants to visit six virtual patients and listen to their heart rhythms. On *Genome Island*, students can take part in virtual experiments related to genetics.

THE ARTS

Whether showcasing a digital painting, performing a virtual ballet, or playing the trumpet in a jazz band, virtual performances are a way for young people to share their skills and talents with an authentic audience. Virtual worlds provide a venue for all kinds of performances as well as museums to showcase works of art.

What if the coolest objects and easy development tools were available to teachers and young learners in a free, sheltered environment? What world would you create?

THE PITFALLS

Teen Second Life provides a safe, nurturing place for young people (ages 13 to 17) to build and explore. Unfortunately, it is not a place where young people can interact with adults or easily collaborate on educational projects without special arrangements and expensive virtual space.

The main grid of *Second Life* is designed for adults and reflects the best and worst of society. Although there are rules governing behavior, there are many places and activities that are only appropriate for mature audiences. From nudity and adult theme clothing to war games and sexual activi-



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WEB SITES <

KIDS

Age of pirates. <http://ageofpirates.com>. Read about famous pirates such as Anne Bonney and Captain Kidd, listen to pirate jokes, or play Pirate Tiles (a form of mahjong solitaire) and Pieces of Eight (similar to the game Bejeweled).

Pirates-topics-British Council. www.britishcouncil.org/kids-topics-pirates.htm. Lower elementary kids can match pirate words with their pictures in a game of memory, listen to a pirate song then put together a puzzle, take a quiz, read a story, or make a pirate craft.

Smunch.com: Pirates Cove. <http://smunch.com/cove>. Calculate other ships' speed and your canon's trajectory to sink the other ships. Watch out or you'll be hit by canon fire or a large rock!

Pirates in Dominica: Pirate games. www.piratesdominica.com/games.cfm. Discover your pirate name, decipher clues on a treasure hunt, or play Pirates of the Caribbean Battleship.

Blackbeard: Terror at sea: National Geographic channel. <http://channel.nationalgeographic.com/channel/blackbeard>. Site includes a biography of Blackbeard, list of pirate facts and fiction, pirate hangman game, and video as well as photos from National Geographic Channel's movie *Blackbeard: Terror at Sea*. Site requires Flash 7.

ties, one of the pitfalls of *Second Life* for educators is that mature content is scattered throughout the world making it an inappropriate tool for kids. This open atmosphere is what draws some people to the environment, but it is also a cause of frustration for educators who would love to be able to take students on virtual field trips and immerse their students in resources available in *Second Life*, but not *Teen Second Life*. While it is possible to record virtual experiences in *Second Life* to replay for students or lead a tour that students can watch in *Second Life*, it is not a place where young people are currently allowed.

Another concern is bandwidth. Many schools do not have the infrastructure to support multi-user environments. In addition, it can be time consuming to develop the learning environments that might be the most useful to young learners.

Unfortunately, no single tool addresses all of these concerns. Although *Second Life* is the most popular adult tool, other MUVES such as *Active World* and *There* also have a following. Google *Lively* and *Metaplace* take a slightly different approach and may gain in popularity as they evolve.

Besides *Teen Second Life*, there are a few other environments designed for young people including *Whyville*, *Zoey's Room*, *Club Penguin*, *Minyanland*, and *Webkinz*. Unfortunately, these environments do not have the flexibility of the adult environments.

THE PROMISE

Given the potential and pitfalls, Multi-User Virtual Environments promise to provide a wonderful world for teaching and learning. The key is matching the promise of technology with the creative minds of educators and their students. For instance, the *Global Kid's* project has established an island in *Teen Second Life*. Their *Holy Meatballs* blog features articles, along with videos by teens sharing experiences with *Teen Second Life*. Partnering with institutions such as the United States Holocaust Memorial Museum, the group cosponsors live, "in-world" events for youth.

Scoolaborate is a global project using

a wide range of technologies including virtual worlds to connect young people from around the world.

The *Kidz Connect* project involves young people in collaborative projects with students in other countries. For instance, a series of events are planned for the Henry Hudson 400 Festival, which will celebrate the 400-year-old bond between the Dutch and Americans that started with Henry Hudson's founding of New York in 1609. *Second Life* will be used to recreate 17th Century Amsterdam and New York.

VIRTUAL WORLDS AND THE TEACHER-LIBRARIAN

Many opportunities are available for professional development in *Second Life*. For instance, *Book Island* sponsors many book and author activities. Organizations like the American Library Association at *ALA Island* provide ongoing resources such as the *Terabithia Storytelling* area, as well as special events in *Town Square* like Banned Book Week activities. Consider joining professional groups in *Second Life* so you can receive notifications of upcoming events and activities.

The International Society for Technology in Education's *ISTE Island* is a great place for newbies to learn about and experience *Second Life*. Go to <http://secondlifegrid.net/slfe/education-use-virtual-world> for more information.

ISTE and other organizations are working with *Second Life* to develop educational opportunities and virtual spaces that will be safe for young learners, yet available to their teachers. Use resources such as the *Second Life Education Blog* and *SimTeach* to track the progress of these innovative programs.

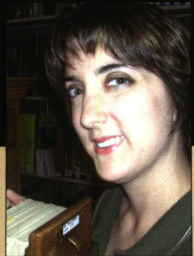
For the past several years, we have been visiting and collecting *Second Life* locations of interest to educators and librarians. We have also established a list of virtual locations for use in *Second Life* tours. Learn more at <http://slurl.wikispaces.com/>.

SECOND LIFE SLURLS

ALA Island <<http://slurl.com/secondlife/ALA%20Island/118/102/29>>

ALA Island's Town Square <<http://slurl.com/>>

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> WEBSITES

TEACHERS

DLTK's crafts for kids: Pirate activities. www.dltk-kids.com/crafts/pirates. A variety of pirate-themed crafts including paper dolls, a milk carton pirate ship, and a toilet paper roll parrot. All crafts link to full instructions with recommended ages.

National Geographic: Pirates of the Whydah www.nationalgeographic.com/whydah. The *Whydah*, which sank off Cape Cod in 1717, was transporting Captain "Black Sam" Bellamy and 143 pirates. Biographical information on the crew, the full article published in *National Geographic*, and links to additional pirate sites are included.

Expedition Whydah www.whydah.com/education.html. Extensive educator resources augment the Whydah Museum's website, including a lesson plan, games and activities, educator guide, and video clip of divers exploring the sunken ship.

Silver bank at National Geographic: Navigation-lost at sea! www.nationalgeographic.com/silverbank/cintro.html. This classroom activity teaches students to calculate their location on earth using a handmade quadrant and the North Star. Can they escape the fate of the *Concepción*, a pirate ship that ran aground in 1641 when the ship's pilots miscalculated their location?

New England Pirate Museum—educational curriculum. www.piratemuseum.com/ec.html. This site features an extensive list of class handouts and lesson plans from the New England Pirate Museum, for students in elementary grade, middle school, and high school. Teacher resources such as pirate poems, a who's who on the ship, and article on historical perspective are also included.

com/secondlife/ALA%20Island/203/55/61
ALA Island's Terabithia Storytelling Area <<http://slurl.com/secondlife/ALA%20Island/28/103/21>>

Alliance Virtual Library at Info Island <<http://slurl.com/secondlife/Info%20Island/111/104/33>>

Book Island <<http://slurl.com/secondlife/Book%20Island/213/224/37>>

Bradburyville <<http://slurl.com/secondlife/Bradburyville/128/128/2>>

Chichen Itza <<http://slurl.com/secondlife/Visit%20Mexico/77/95/36>>

Genome Island <<http://slurl.com/secondlife/Genome/137/87/29>>

Globe Theatre <<http://slurl.com/secondlife/Literary/59/32/21>>

Healthinfo Island <<http://slurl.com/secondlife/Healthinfo%20Island/102/190/24>>

Heart Murmur <<http://slurl.com/secondlife/waterhead/130/37>>

Hogwarts <<http://slurl.com/secondlife/Liquid%20Heat/240/81/67>>

Imagination Island <<http://slurl.com/secondlife/Imagination%20Island/80/216/25>>

Independent State of Caledon <<http://slurl.com/secondlife/Caledon/190/190/23>>

Island of Svarga <<http://slurl.com/secondlife/Svarga/7/124/22>>

ISTE Island <<http://slurl.com/secondlife/ISTE%20Island%202/78/115/23>>

Mystery Manor <<http://slurl.com/secondlife/Info%20Island/181/160/33>>

NASA International Spaceflight Museum <<http://slurl.com/secondlife/Spaceport%20Alpha/47/82/23>>

NASA's Explorer Island <<http://slurl.com/secondlife/Explorer%20Island/183/15/1/22>>

NOAA Science on a Sphere <<http://slurl.com/secondlife/Meteora/145/131/28>>

Paris 1900 Island <<http://slurl.com/secondlife/Paris%201900/128/128/0>>

Ramapo's Frost Storyworld <<http://slurl.com/secondlife/Eduisland%206/36/224/21>>

Renaissance Island <<http://slurl.com/secondlife/Renaissance%20Island/99/91/26>>

ROMA Archaeology <<http://slurl.com/secondlife/ROMA%20Transiberim/20/56/28>>

Sci-Fi and Fantasy Portal <<http://slurl.com/secondlife/Info%20Island/188/118/33>>

Second Life Pioneers <<http://slurl.com/secondlife/Meadowbrook/220/82/23>>

Second Nature <<http://slurl.com/secondlife/Second%20Nature%203/150/98/21>>

St. Louis Island <<http://slurl.com/secondlife/St%20Louis%20Island/183/128/30>>

Temple of Isis <<http://slurl.com/secondlife/Themiskyra/72/241/35>>

Virtual Hallucinations <<http://slurl.com/secondlife/Sedig/27/44/22>>

Waterpartners Village <<http://slurl.com/secondlife/Brander/160/189/66>>

Weather Channel <<http://slurl.com/secondlife/Weather/113/5/26>>

Website Addresses

Active World <<http://www.activeworlds.com/>>

Club Penguin <<http://clubpenguin.com/>>

Global Kids' Holy Meatballs blog <<http://www.holymeatballs.org/>>

Kidz Connect <<http://www.kidzconnect.org/>>

Meet the Immigrants <<http://www.lubbockisd.org/webquests/MeetImmigrants/>>

Metaplace <<http://metaplace.com/>>

Minyanland <<http://minyanland.com/>>

SimTech <<http://simtech.com/>>

Skoolabrate <<http://www.skoolabrate.com/>>

Second Life <<http://www.secondlife.com/>>

Second Life Education Blog <<http://www.sl-educationblog.org/>>

There <<http://www.there.com/>>

Teen Second Life <<http://teen.secondlife.com/>>

Webkinz <<http://www.webkinz.com/>>

Whyville <<http://www.whyville.net/>>

World of Warcraft <<http://www.worldofwarcraft.com/>>

Zoe's Room <<http://zoeyssroom.com/>>

Note: Portions of this article were adapted from a panel presentation prepared for the *K-12 Online Conference* <<http://k12onlineconference.org/>>.

The entire panel discussion is available on *Voicethread* at <<http://voicethread.com/share/8878/>>.

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